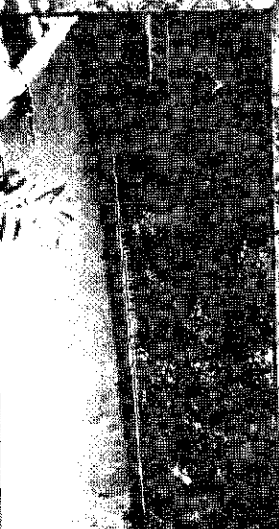
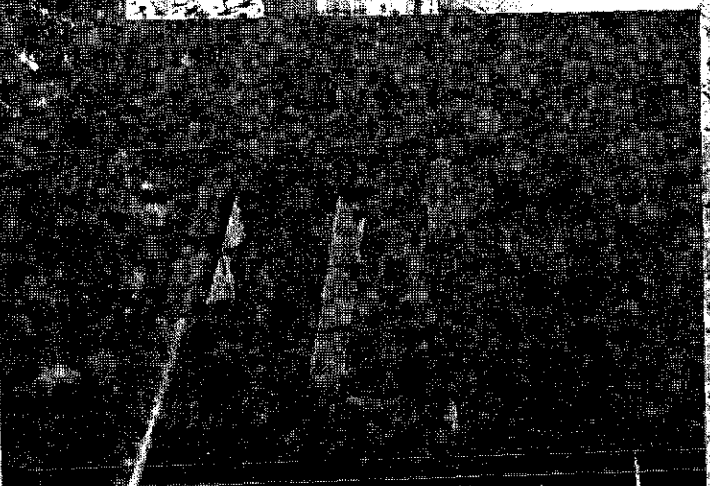


Proposal for the
CALFED Bay Delta Program
Fiscal Year 1999 Tardy Implementation Program for Designated Actions

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Fish Passage Improvement Project, Phase III



January 1999

1-021185

1-021185

Fish Passage Improvement Project, Phase III

I. Title Page

Title of Project

ACID Fish Passage Improvement Project, Phase III

Name of Applicant/Principal Investigator(s)

Anderson-Cottonwood Irrigation District

2810 Silver Street

Anderson, California 96007

Phone: 530/365-7329, Fax: 530/365-7623, E-mail: dvs@shasta.com

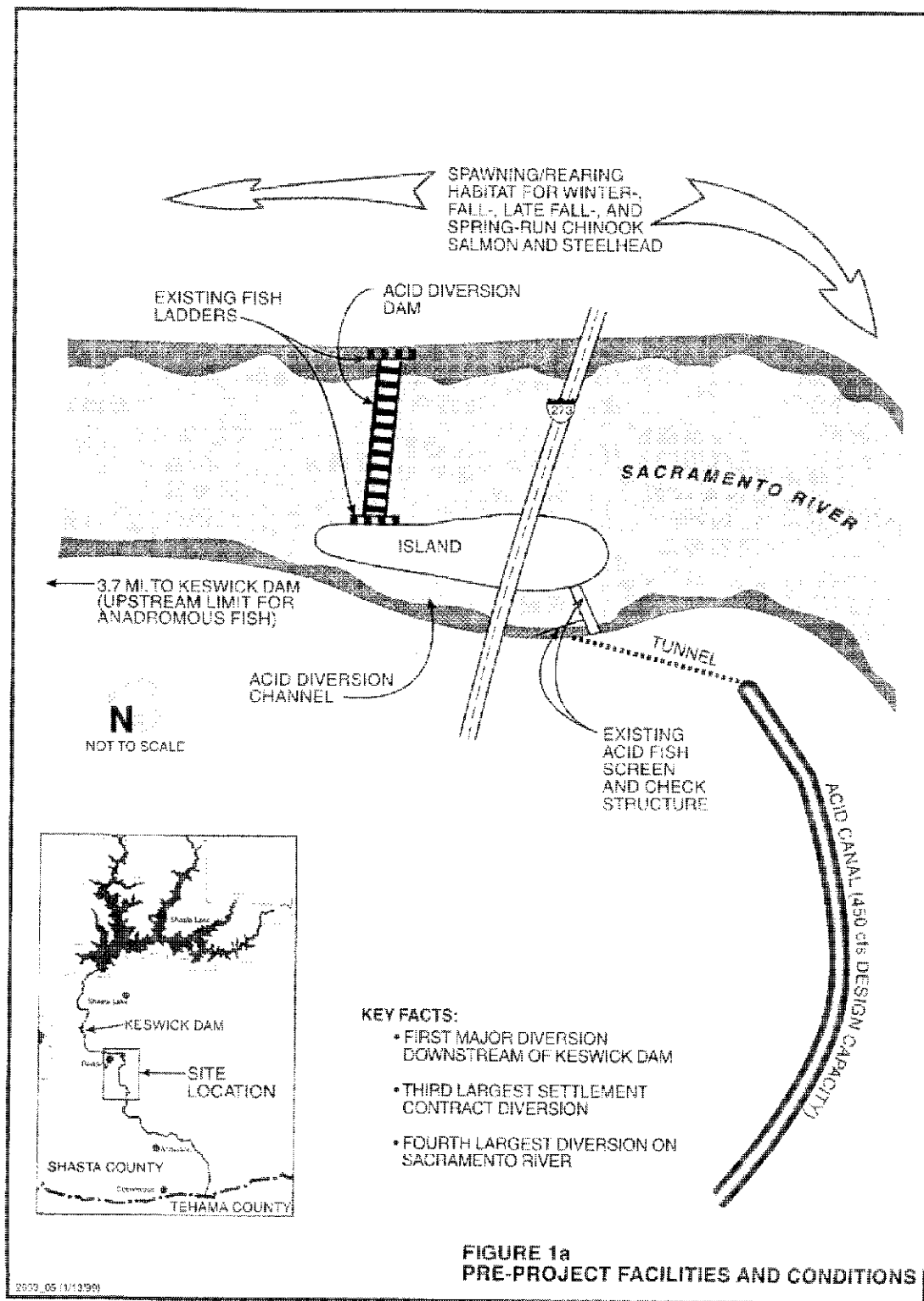
Contact Person: Dee Swearingen, General Manager

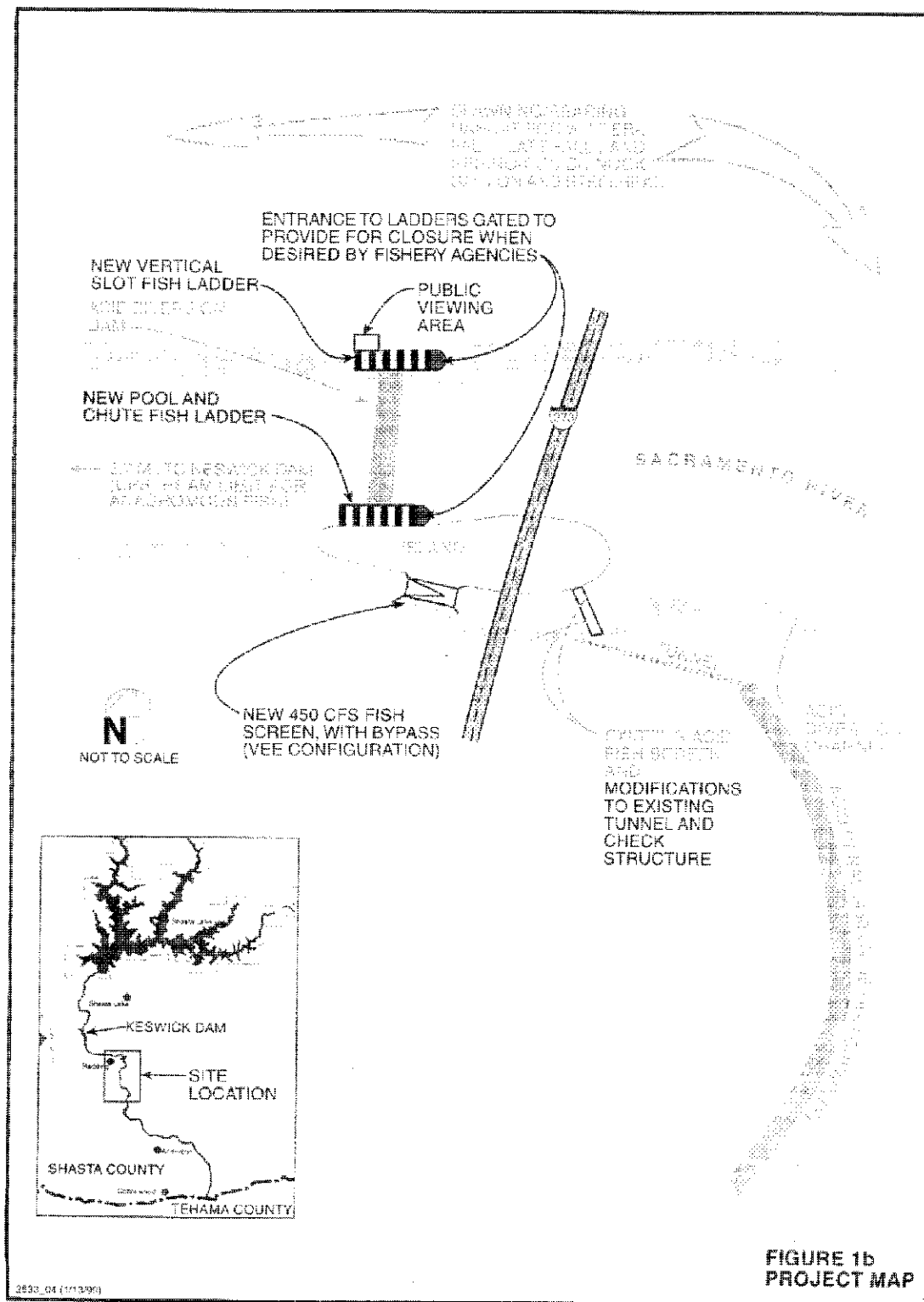
Participants/Collaborators in Implementation

The proposed improvements are being designed by CH2M HILL, an engineering consultant to ACID, with input from the ACID Fish Passage Review Team (FPRT), composed of the CDFG, USFWS, NMFS, Reclamation, and DWR. This team, supported by CH2M HILL, will continue to be involved as the project moves toward completion of construction by the year 2001.

General Project Description/Executive Summary

This project consists of construction of a new 450-cfs fish screen, a new vertical slot fish ladder, and a new pool-and-chute fish ladder at the ACID Main Diversion Dam on the Sacramento River in Redding, California. This grant will fund Phase III of an ongoing CALFED-funded effort to correct fish passage and fish screening problems at this site. The project will directly benefit all anadromous Sacramento River fish species within a critically important spawning reach for federal and state-listed endangered winter-run chinook salmon and all other upper Sacramento River salmon runs currently proposed for listing. Screen improvements will correct existing downstream passage deficiencies (entrainment, impingement, stranding, predation of juveniles, and false attraction of adults). Ladder improvements will correct upstream passage deficiencies (injury, stress, crowding, disorientation, and delays of adults) and enable appropriate fish passage management by agencies participating in the ACID FPRT. This proposal, conceived with ACID FPRT input, recognizes that a combined fish screen/fish ladder approach is the most economically and biologically beneficial fish passage solution. Funding will facilitate timely award of a construction contract by the end of fiscal year 1999 and construction beginning early in fiscal year 2000. It is planned that the facilities will be fully operational by April 2001. Proposed project features and location are shown on Figures 1a and 1b.





II. Proposed Scope of Work

The section below describes the tasks and deliverables for Phase III of the ACID Fish Passage Improvement Project. The schedule for each task is illustrated on Figure 2.

Task 1—Project Management

This task includes all of the project-related activities to be undertaken by the manager, staff, and legal counsel of the Anderson-Cottonwood Irrigation District (ACID or District) related to the ACID Fish Passage Improvement Project. This work will include attending project coordination meetings; staff review and training required for operating and maintaining the new structures; submitting required progress reports and billing information to the funding agencies; and preparing legal documents related to land rights, water rights, and construction contracts.

Deliverables: Quarterly or monthly progress reports and billing information, as required.

Task 2—Preconstruction Activities

This task includes the services of the engineering consultant during the bidding phase of the project. These activities will include responding to bidders' questions, preparing addenda, attending the prebid meeting and bid opening, evaluating bids, and assisting the District in making the award and issuing the construction contract.

Deliverables: Breakdown of contractor bids and summary of successful bid.

Task 3—Construction

This task includes the work of the construction contractor. The project construction will be the responsibility of a single construction contractor under contract directly with the District.

Deliverables: Completed project facilities as described within this proposal.

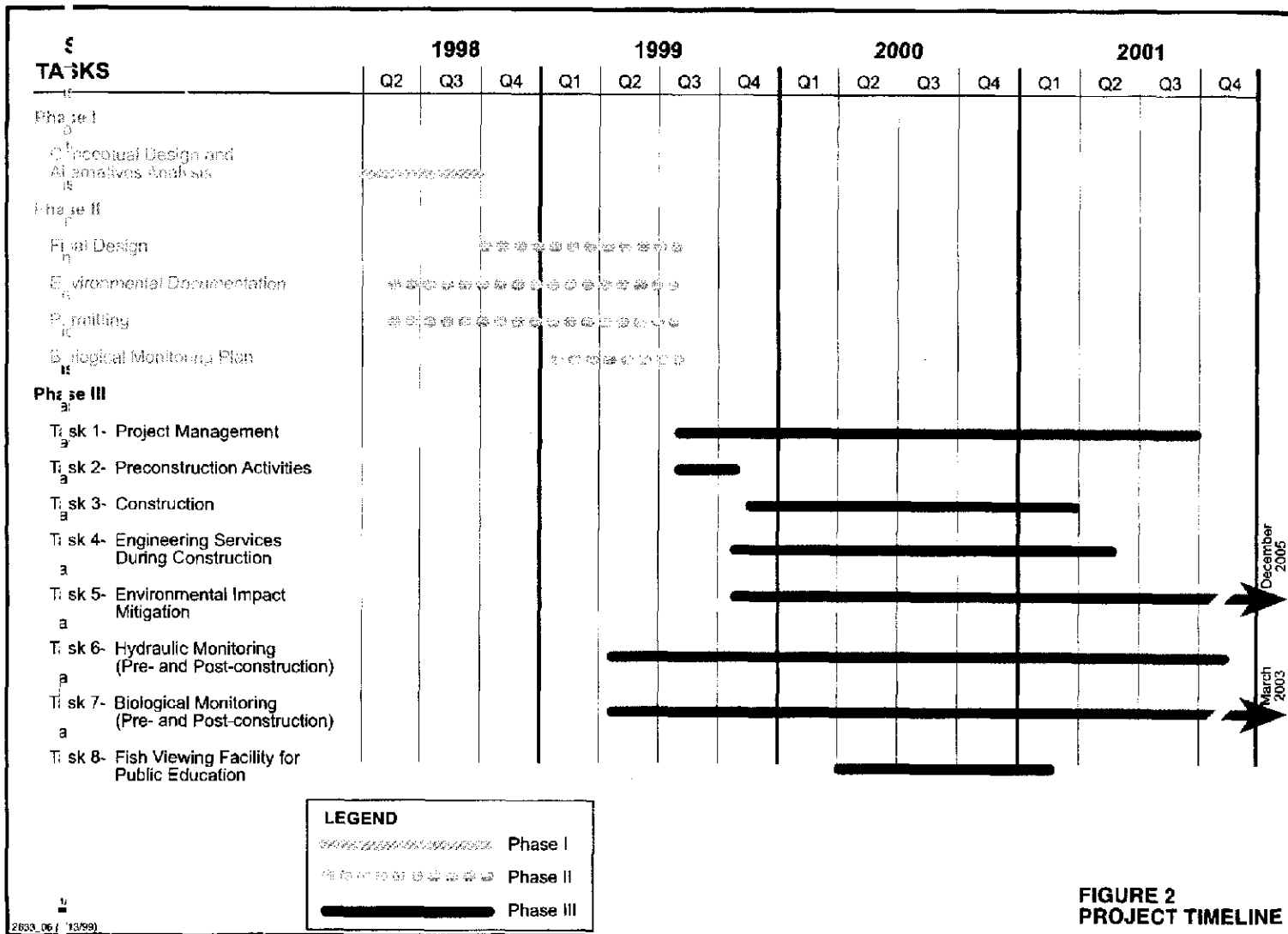
Task 4—Engineering Services During Construction

This task includes the services of the engineering consultant during the construction phase of the project. Services provided will include construction management, submittal review, inspection, environmental permit compliance monitoring, supervising startup tests, final drafting of record drawings, and preparing the O&M manual.

Deliverables: Record drawings, if required, and O&M manual.

Task 5—Environmental Impact Mitigation

This task involves the work required to implement environmental impact mitigation measures that are described in the project CEQA/NEPA document. Currently anticipated environmental impact mitigation measures are as follows: anti-spawning mats for pile driving impacts; shaded riverine aquatic (SRA) habitat replacement; temporary fish passage facilities, if required; removal of rearing salmonids from wheel ditch; surveys for special-status species and potential scheduling changes; weir and habitat replacement; construction of weir on island to offset increased flood elevations in main channel; regulation of



construction activities if grab samples show 20-percent increase in turbidity over natural levels; implementation of erosion control and pollution control plans; implementation of construction noise-reducing measures, if necessary; and implementation of dust control measures.

Deliverables: Implementation of mitigation measures and monitoring the success of the measures, plans for maintenance, and associated costs.

Task 6—Hydraulic Monitoring

This task will consist of pre- and post-construction measurements of velocity and flow volume in the fish ladders and the channel adjacent to the fish screen as described within the Monitoring and Data Collection Methodology section of this proposal. CH2M HILL will conduct this monitoring for the existing ladder and screen facilities prior to construction during the year 1999, and for the new facilities during the first full year of operation (2001).

Deliverables: Report summarizing data collection and results of evaluation.

Task 7—Biological Monitoring

This task will consist of implementing or continuing biological monitoring as described within the Monitoring and Data Collection Methodology section of this proposal. Biological monitoring will include continuation of aerial redd surveys and carcass counts by the CDFG, and radio telemetry and video monitoring by the USFWS. CDFG efforts will be funded separately from this funding request. USFWS monitoring is part of this request and would be funded either through separate agreement between CALFED and the USFWS or passed through the grant recipient, ACID, to the USFWS.

Deliverables: Report submitted by the agencies summarizing data collection and results of evaluation.

Task 8—Fish Viewing Facility for Public Education

This task will result in the construction of a fish viewing facility at the new north bank fish ladder in Caldwell Park. The facility will provide Caldwell Park visitors with an opportunity to directly view salmon using the ladder through a 4-foot by 5-foot window in the wall of the ladder's exit pool. The facility will include stairs, a wheelchair access ramp, handrails and fencing, lighting, and landscaping.

Deliverables: Complete fish viewing facility.

III. Location and/or Geographic Boundaries of the Project

The proposed project is located in and adjacent to the Sacramento River in Shasta County and the Sacramento River Watershed Region, as shown on Figures 1a and 1b. The ACID Diversion Dam is located on the Sacramento River approximately 3.7 miles downstream of Keswick Dam (Rivermile 298.5), immediately upstream of the State Route 273 (Market Street) Bridge in Redding. Coordinates for the center of the ACID Diversion Dam are N 2099465, E 6452191 (California State Plane Coordinate System, Zone 1, NAD 83, U.S. Survey Feet).

IV. Ecological Objectives and Related Benefits

Primary Ecological/Biological Objectives

The proposed fish ladder and fish screen project directly addresses at least two specific sets of CALFED Bay-Delta Program Ecosystem Restoration Program Plan (ERPP) objectives. The fish ladder element of the project addresses the "Dams, Reservoirs, Weirs, and Other Structures" implementation objectives on page 152, Volume II of the ERPP. Target 2 under this objective states: "Reduce blockage to fish migrations at the ACID dam." The fish screen element of the project addresses the "Reducing or Eliminating Stressors" objectives on page 151, Volume II of the ERPP. Target 1 seeks to "Reduce entrainment of juvenile salmon, steelhead, sturgeon, and splittail into water diversions to levels that will not impair stock rebuilding or species restoration."

The proposed fish ladder project element has been discussed by resource agencies for years in terms of increased potential for anadromous fish passage, access to under-utilized habitat, and increased production of natural runs of anadromous salmonids and sturgeon. The proposed fish screen project element will result in substantial improvements in terms of reduced potential for entrainment and loss of juvenile anadromous fish. The new fish screen will greatly reduce stranding problems from flow fluctuations, a byproduct of river management to accommodate problems with the existing screen. In addition, the project will eliminate a major false attraction problem for adults at the spill next to the existing screen.

The ACID project is located within a critically important reach for spawning chinook salmon and steelhead in the upper Sacramento River. Spawning surveys have estimated that at least 66 percent of all listed endangered winter-run chinook spawned between the Sacramento River Bridge at Anderson and the ACID Diversion Dam from 1981 to 1993 (F. Fisher, CDFG, pers. comm.). Most of these fish spawned upstream of the Bonnyview diversion. However, in surveys since 1988, very few winter-run chinook redds have been observed upstream of the ACID dam despite a continuing project to provide spawning gravel from stockpiles downstream of Keswick Dam.

Spawning surveys have also estimated that, within the Sacramento River, approximately 75 percent of spring-run chinook salmon (proposed to be listed as threatened by the state of California) spawned in the reach between Sacramento River Bridge at Anderson and the ACID Diversion Dam during 1961 and from 1983 to 1993 (F. Fisher, CDFG, pers. comm.). However, with the existing ladders at the ACID Diversion Dam, these adult spring-run chinook cannot easily access the cooler holding pools upstream of the dam. This holding habitat is crucial for spring-run chinook salmon, because they hold in the mainstem of the Sacramento River from their arrival in May and until they spawn in September. The ability to regulate the passage of chinook salmon into the upstream reach of the Sacramento River would allow CDFG and USFWS to better manage spawning densities and geographical separation during the overlapping period when spring- and fall-run chinook salmon spawn.

The fall- and late-fall-run chinook spawning surveys have also revealed that approximately 25 percent of fall chinook and 43 percent of late-fall chinook salmon spawned in the reach of the river between Anderson and the ACID Diversion Dam from 1967 to 1990 and 1984 to

1992, respectively (F. Fisher, CDFG, pers. comm.). These species may also benefit from improved passage facilities at the ACID dam. Similarly, sturgeon species have been known to frequent the upper mainstem Sacramento River in the vicinity of the ACID facilities. These species may also benefit from additional access into the Sacramento River reach above the ACID dam.

Scientific Hypothesis/Question to be Evaluated Through the Project

Table 1 in Section V below summarizes the hypotheses to be evaluated, monitoring parameters and data collection approach, and data evaluation criteria.

Relation to Previously Funded Project Phases

The proposed project is the third phase of a project that has benefited from previous CALFED funding.

Phase I, approved for CVPIA Water and Energy funds in May 1998 was a feasibility study that included the development and evaluation of project alternatives and conceptual design of the preferred alternative. Other elements of Phase I were conceptual-level construction cost estimates and preliminary investigations of geotechnical, hydrological, hydraulic, permitting requirement, and right-of-way/land ownership issues. Phase II, approved for funding in two stages in August 1998 and October 1998, resulted in the final design of both the fish ladder and fish screen facilities, preparation of contract documents for construction of the facilities, and completion of environmental documents and permits. Funding for Phase III, proposed herein, will result in the construction of the facilities beginning early in fiscal year 2000. It is planned that the facilities would be fully operational by 2001.

Although earlier phases of this project have been funded under CVPIA, CVPIA funding for the proposed Phase III is considered to be impractical. CALFED and CVPIA funds are not generally commingled. Also, because of the estimated construction cost and funding limitations under the CVPIA, construction would have to be spread over at least a 5-year period and would cover only 50 percent of the estimated cost. Assuming that ACID could provide the other 50 percent of the cost through other funding sources, annual mobilization and demobilization for construction in 5 successive years would add significant cost to the project (estimated at \$1 million to \$2 million). It also would delay full implementation of the project by 5 years and significantly increase the potential for impacts to endangered species, public access to park and other public facilities adjacent to the construction site, and water deliveries to ACID customers.

V. Monitoring and Data Evaluation

The monitoring program will be carried out jointly by the USFWS, CDFG, and CH2M HILL as described in Section II, Task 7, above. Data collected via hydraulic monitoring, radio-telemetry, video monitoring, redd counts, and carcass surveys will be compared to existing data and integrated to develop an overall assessment of the performance of the new facilities in improving upstream and downstream fish passage. Table 1 summarizes the components of the monitoring program, the types of data that will be collected, and the basis for evaluating the data.

Table 1. Summary of Ecological / Biological Objectives, Hypotheses, and Monitoring Parameters and Approaches for the Anderson-Cottonwood Irrigation District Fish Passage Improvement Project

Objective I) Improve upstream fish passage			
Question to be Evaluated/Hypothesis	Monitoring Parameter(s) and Data Collection Approach	Data Evaluation Approach	Comments/ Study Priority
Hypothesis I-A: The new project fish ladders improve upstream passage of anadromous fish at the ACID dam	<p>(1) Annual CDFG aerial salmon redd counts and adult salmon carcass survey for the Sacramento River will be continued.</p> <p>(2) Using radio telemetry, time and frequency of passage and direction of movement data for adult fall-run chinook salmon through the ladders and in the vicinity of the ACID dam will be monitored following ladder replacement. This work will be conducted by the USFWS and will be used to track individual fall-run chinook salmon in the reach of the Sacramento River from the Highway 44 Bridge to Keswick dam during the months of August and September in the year prior to and following the replacement of old fish ladders.</p> <p>(3) Video monitoring will be continued to photo-document the frequency of the use of fish ladders prior to and following ladder replacement.</p>	<p>(1) Numerical redd count and population estimate data obtained before and after ladder replacement will be compared to determine performance of new ladders with respect to providing a more favorable distribution of spawning salmon upstream and downstream of the dam.</p> <p>(2) Statistical analysis of total transit time (mean, range, and coefficient of variation) from release point to passage upstream of the ACID dam will be conducted comparing adult salmon tagged in the year prior to ladder construction (existing ladders) and the year(s) following new ladder construction. Additional statistical comparisons evaluating the time of transit within each of the two existing ladders with transit time through the newly constructed fish ladders will be made.</p> <p>(3) Frequency of use of each of the existing ladders prior to replacement will be compared to frequency of use of each of the replacement ladders. The direction and movement of tagged fish prior to and following ladder replacement will be evaluated in light of video monitoring information to determine changes in the patterns of ladder usage and movement above and below ACID dam.</p>	Item (1) will be conducted by CDFG, items (2) and (3) by the USFWS
Hypothesis I-B: The new project fish ladders will be more reliable than old ladders	Water velocity and flow measurements from both new ladders will be obtained at several stage heights (river elevations) to evaluate and optimize ladder performance and monitor its reliability to pass adult salmonids upstream of the ACID dam over the full range of operating conditions. Water surface elevations (stage heights) will be monitored at various locations within each new fish ladder. Velocity and flow measurements will be obtained for each of the old fish ladders prior to construction to establish a baseline for comparison.	Water velocity and flow data collected from each of the ladders (at entrance, within ladder, at exit) will be compared to design criteria to determine each ladder's reliability with respect to providing desirable velocities and flows over the full range of operating conditions. Stage height data at each ladder will be collected and periodically evaluated to ensure optimization of ladder performance in meeting desired velocities and flows as designed. This information will be used to develop a set of standard operating procedures to maximize ladder operation and reliability	Work to be performed by CH2M HILL.

Table 1. Summary of Ecological / Biological Objectives, Hypotheses, and Monitoring Parameters and Approaches for the Anderson-Cottonwood Irrigation District Fish Passage Improvement Project

Objective II) Improve downstream fish passage			
Question to be Evaluated/Hypothesis	Monitoring Parameter(s) and Data Collection Approach	Data Evaluation Approach	Comments/ Study Priority
Hypotheses II-A: The new project fish screen meets current performance criteria designed to protect anadromous salmonids	Screen approach, sweeping, and bypass flow velocities will be measured to determine compliance with latest screen criteria for the protection of anadromous salmonids. These measurements will be made during at least three periods during maximum and minimum diversion rates to determine variability of fish screen performance in meeting hydraulic criteria. Transit times through the bypass pipeline will be measured using neutrally buoyant floats.	Central tendency statistics for approach, sweeping, and bypass flow velocities will be calculated for each of three measurement periods from numerous locations in front of the screen panels. Bypass entrance and exit velocities will be measured with velocity meters. The mean and range of velocity (variability) within each measurement event and between measurement events will be evaluated for overall performance in meeting NMFS fish screen velocity criteria.	This monitoring strategy assumes that current fish screening performance criteria protect young life stages of anadromous salmonids. Compliance with criteria implies acceptable protection of these species. Work to be performed by CH2M HILL.
Hypothesis II-B: The new project fish screen will be more reliable than old screens	<p>(1) Following initial installation of new screens, divers will visually inspect screen panels during operation for integrity and identify any structural defects that would either adversely affect fish survival or provide opportunity for entrainment into the ACID diversion canal. Prior to watering the diversion canal annually, new project screens will be visually inspected to ensure that the structure is performing as designed. If, at the time of the annual visual inspection, there are indications that the screen might not be reliable, an underwater inspection could be necessary.</p> <p>(2) ACID diversion canal stage heights will be recorded in front of (upstream) and behind (downstream) the new replacement screens. Similar stage measurements will be recorded for the existing screen prior to construction to establish a baseline for comparison.</p> <p>(3) The existing practice of maintaining a screen maintenance log will be continued after the new screens are installed. This log will be used to record results of annual inspections, any required screen repairs or maintenance, problems with debris accumulation or cleaning, and general observations that might affect screen reliability.</p>	Stage height data from in front of and behind the screens will be periodically compared to determine screen reliability in meeting screen performance criteria at desired canal flow rates. Head differential across the screen will indicate the screen cleaning performance and, thus, reliability of the new screen to meet approach and sweeping velocity criteria. Comparison of head differentials and velocity data will correlate the screen performance and cleaning system performance. Screen maintenance logs will be periodically reviewed to evaluate screen reliability and identify problems associated with operation of the screens. This review will be used to modify, if necessary, any standard operating procedure or maintenance activities for the screens.	A maintenance log is currently maintained by CDFG for the existing screens. Item (1) to be performed by state or Federal personnel, or CH2M HILL subcontractor. Items (2) and (3) to be performed by ACID and CDFG.

VI. Technical Feasibility and Timing

Alternatives Evaluation

The ACID FPRT assisted ACID in developing and evaluating fish passage alternatives. The group consisted of engineers and fisheries biologists from CDFG, USFWS, Reclamation, DWR, NMFS, and CH2M HILL.

Alternatives identified for upstream fish passage incorporated different types of fish ladders, various numbers and locations of fish ladders, removal of the dam, repair of existing fish ladders, and a no-project alternative. Pool-and-weir and Denil fish ladder types were eliminated because of a lack of head adjustability for varying river flows. Pool-and-chute and vertical slot ladders were determined to be the most suitable for the site because of their adjustability and proven track record in similar installations. In addition to the fish ladders at each end of the dam, a third fish ladder was considered at the center of the dam, but this alternative was dropped because of the need to use a trestle for construction, making it prohibitively expensive. Two alternatives considered for removing the dam were to construct a pipeline from Keswick Reservoir to the existing ACID canal or constructing a screened pump station on the river. Both approaches were dropped because they would be extremely expensive, would have greater negative environmental impacts associated with construction, and would be more difficult to implement. Additionally, the pipeline from Keswick Reservoir would reduce flows in the river in the 3.7 mile reach above the ACID dam and diversion. Repair of existing fish ladders was not considered to be a legitimate alternative because these ladders were not designed to modern standards. It is unlikely that the end product would offer fish passage consistent with the goals of the project and comparable to other types of new fish ladders. The no-project alternative is inconsistent with fish passage objectives for the Sacramento River. The selected (preferred) alternative for the project consisted of a pool-and-chute ladder on the south bank of the river and a vertical slot ladder on the north bank.

Alternatives identified for downstream fish passage incorporated different types of fish screens and different sites for the screens. T-screens and drum screens were eliminated because of the high head loss across the screen and a history of problems with fry passing through gaps, respectively. The Universal Stream Bottom Retrievable screen was eliminated because it has not been tested in the range of sizes needed for the ACID project. The single diagonal flat-plate screen was found to be less suitable than the Vee configuration, primarily because of longer exposure time, requiring an intermediate bypass. Four potential sites for the screen were considered: 1) at the existing screen site; 2) in the ACID wheel ditch just upstream of the State Route 273 bridge; 3) at the entrance to the wheel ditch near the dam; and 4) near the railroad bridge. Site 1 was eliminated because of poor access. Sites 3 and 4 were eliminated because of inadequate depth and the associated requirement for greater screen lengths and exposure time. Site 2 offered the most favorable combination of depth, access, and protection from flooding. The selected alternative for the project consists of a 450-cfs flat-plate screen oriented in a Vee configuration and located at Site 2.

NEPA/CEQA Compliance

NEPA compliance will be achieved through preparation of a Proposed Finding of No Significant Impact with supporting Environmental Assessment. CEQA compliance will

be achieved through preparation of a Mitigated Negative Declaration with supporting Initial Study. Compliance will be in the form of a single, comprehensive document that meets the requirements of both NEPA and CEQA. Comments on the Administrative Draft are currently being incorporated into the public draft that will be released in late January 1999.

Permits

Permits known or anticipated to be required for the project are summarized in Table 2.

Resolving Other Outstanding Implementation Issues

Among the implementation issues are rights-of-way, access to the construction site, and identifying construction staging areas on each side of the river. Adjacent lands are owned or administered by ACID, the City of Redding, and the State of California. The State Route 273 bridge across the Sacramento River spans the wheel ditch just downstream of the fish screen site, and a portion of the work will need to be completed within the bridge's (Caltrans) right-of-way. Project review team meetings and the design process are addressing these issues. ACID is negotiating with the City and Caltrans regarding access and right-of-way/easement issues.

Presently, the major outstanding issue is project funding. The availability of funding governs when the project can be built, and construction timing must be finalized for the permit applications and construction documents to be completed. Receipt of CALFED funding by the beginning of the third quarter of 1999 will resolve this issue.

VII. Cost and Cost-Sharing

Total Budgeted Costs and Quarterly Budget

Table 3 shows a breakdown of total budgeted costs and a quarterly budget.

Sample Quarterly Budget

Table 4 shows sample quarterly budgets for the duration of the project.

Other Funding Commitments

When the project is completed, ACID will own the new facilities and will be providing operation and maintenance (O&M) services. These services have historically been provided by CDFG and USFWS through legal agreements. This service will constitute ACID's cost share for the project. Annual O&M costs are expected to be approximately \$45,000, which, when capitalized over 20 years, is equivalent to \$516,000 in year 2000 dollars (at 6 percent interest).

CDFG will continue to contribute biological monitoring activities, which include aerial redd surveys and carcass counts. There are no other current funding commitments to this project.

TABLE 2**Permits Required to Implement the Fish Passage Improvement Project**

Permit	Required Action/Comments
Federal Clean Water Act Section 404 Permit	Verification letter from U.S. Army Corps of Engineers (Corps) was received December 1998. Final permit will also require Water Quality Certification.
Federal Endangered Species Act Section 7 Consultation	Dependent on final mitigation requirements determined in EA/IS.
Federal Clean Water Act Section 401 Water Quality Certification	Currently in draft stage awaiting determinations of fill requirements, wetlands impacts, and temporary versus permanent impact acreage. Needs CEQA document before can go public.
California Fish and Game Streambed Alteration Agreement	CDFG recommended that the permit be submitted in January 1999, because permit is valid for 1 year from date of issuance.
National Historic Preservation Act Section 106 Consultation	Report is finished, waiting for decision from USFWS on State Historic Preservation Office initiation.
State Lands Commission Public Agency Lease/Encroachment Permit	Permit application submitted November 20, 1998. Several correspondences have been sent since then. Project will be covered under an amendment to existing lease.
State Reclamation Board Encroachment Permit	Permit application submitted November 16, 1998.
National Flood Insurance Act Conditional Letters of Map Revision	CH2M HILL documentation work is still in progress.
Use Permit and Rights-of- Way/Encroachment Agreements	Letter to City sent on November 20, 1998. Notice to Caltrans sent on October 5, 1998. Property boundary maps submitted to City and Caltrans on December 15, 1998. Meeting with City will occur sometime in January 1999.

TABLE 3
Total Budgeted Costs and Quarterly Budget

Task	Direct Labor Hours	Direct Salary/Benefits (\$)	Service Contracts (\$)	Material/Acquisition Costs (\$)	Misc./Direct Costs (\$)	Overhead and Indirect Costs (\$)	Total Cost (\$)
Task 1	2,458	73,000	40,000	0	9,700	7,300	130,000 ^a
Task 2	0	0	50,000	0	0	0	50,000
Task 3	0	0	8,500,000	0	0	0	8,500,000
Task 4	0	0	620,000	0	0	0	620,000
Task 5	0	0	300,000	0	0	0	300,000
Task 6	0	0	150,000	0	0	0	150,000
Task 7	4,976	156,000	0	40,000	9,500	44,500	250,000 ^b
Task 8	0	0	200,000	0	0	0	200,000
Total	7,434	229,000	9,850,000	40,000	19,200	51,800	10,200,000

^aCost breakdown based on ACID personnel and legal fees.

^bCost breakdown based on USFWS personnel.

TABLE 4
Sample Quarterly Budgets for Duration of Project

Task	Quarterly Budget Apr-Jun 99	Quarterly Budget Jul-Sep 99	Quarterly Budget Oct-Dec 99	Quarterly Budget Jan-Mar 00	Quarterly Budget Apr-Jun 00	Quarterly Budget Jul-Sep 00	Quarterly Budget Oct-Dec 00	Quarterly Budget Jan-Mar 01	Quarterly Budget Apr-Jun 01	Quarterly Budget Jul-Sep 01	Quarterly Budget Oct-Dec 01	Total (\$)
Task 1	0	30,000	20,000	10,000	10,000	10,000	10,000	10,000	20,000	5,000	5,000	130,000
Task 2	0	40,000	10,000	0	0	0	0	0	0	0	0	50,000
Task 3	0	0	870,000	2,610,000	1,255,000	1,255,000	1,255,000	1,255,000	0	0	0	8,500,000
Task 4	0	0	75,000	75,000	105,000	105,000	105,000	105,000	50,000	0	0	620,000
Task 5	0	0	10,000	5,000	80,000	27,000	27,000	27,000	20,000	20,000	20,000	300,000 ^a
Task 6	18,000	12,000	10,000	0	15,000	10,000	8,000	0	30,000	25,000	22,000	150,000
Task 7	0	30,000	13,000	8,000	6,000	4,000	4,000	27,000	19,000	37,000	23,000	250,000 ^a
Task 8	0	0	0	0	0	0	100,000	100,000	0	0	0	200,000
Total	18,000	112,000	1,008,000	2,709,000	1,471,000	1,411,000	1,509,000	1,524,000	139,000	87,000	70,000	10,200,000^a

^aTasks 5 and 7, involving environmental impact mitigation monitoring and USFWS biological monitoring, will continue through 2003 and 2005, respectively, with a total anticipated cost of \$142,000 beyond quarter 4 of 2001.

Incremental Funding and Implementation

As discussed in Section IV above under the heading, "Relation to Previously Funded Project Phases," the action for which funding is being requested is construction of fish passage facilities. Construction is Phase III of a program that included feasibility evaluation and conceptual design (Phase I) and final design and environmental compliance documentation (Phase II). Although Phase I was funded under CVPIA, CVPIA funding for Phase III is considered to be impractical, specifically because such funding would result in incremental construction over a 5-year period. Annual mobilization and demobilization for construction in 5 successive years would add significant cost to the project (estimated at \$1 million to \$2 million); delay full implementation for 5 years; and significantly increase the potential for impacts to endangered species, public access to park and other facilities adjacent to the construction site, and water deliveries to ACID customers. Conversely, full funding for construction during a single funding cycle would minimize these potential impacts and save mobilization and demobilization costs.

VIII. Local Impacts, Support and Involvement

The community in which the project is located (i.e., City of Redding and Shasta County) is knowledgeable and supportive of the proposed project. ACID is the largest water rights holder on the Sacramento River in Shasta County, and the project solidifies ACID's water rights and future operational capabilities, which are important to the rural-residential economy of Redding and Anderson and the Town of Cottonwood. ACID's service area overlaps the boundaries of the cities of Redding and Anderson and the Town of Cottonwood.

Shasta County Department of Public Works has been directly contacted by ACID regarding the project. The County Planning Department also is aware of the project through the Notice of Preparation of the combined CEQA/NEPA document being prepared for the project. The City of Redding also has been notified in writing of the project, is aware of the project through the Notice of Preparation, has contributed information in support of the CEQA/NEPA document, and has sent a representative to attend FPRT meetings on behalf of the City. The City supports the project. Caltrans also has been notified of the project in writing.

A complete list of governing bodies and agencies that have been involved in the project coordination process or have provided input on the project through the CEQA/NEPA documentation process includes ACID, USFWS, Reclamation, U.S. Army Corps of Engineers, NMFS, Natural Resources Conservation Service, CDFG, California State Reclamation Board, Central Valley Regional Water Quality Control Board, California Office of Historic Preservation, Shasta County, and City of Redding.

Other local entities that are aware of the project include the Shasta County Water Agency and the Western Shasta Resource Conservation District. ACID staff have attended meetings of these agencies at which the project was discussed. The project is a response to concerns raised by resource agencies and environmental groups regarding fish passage at the ACID Diversion Dam—as reflected in the ERPP objective to "Reduce blockage to fish migrations at the ACID dam"—and there is no organized opposition to the project.

Lands adjacent to the project are owned or administered by ACID, the City of Redding, and the State of California, which are proponents of and participants in the project. The facility owner and operator, ACID, is the project sponsor and primary proponent on behalf of its customers.

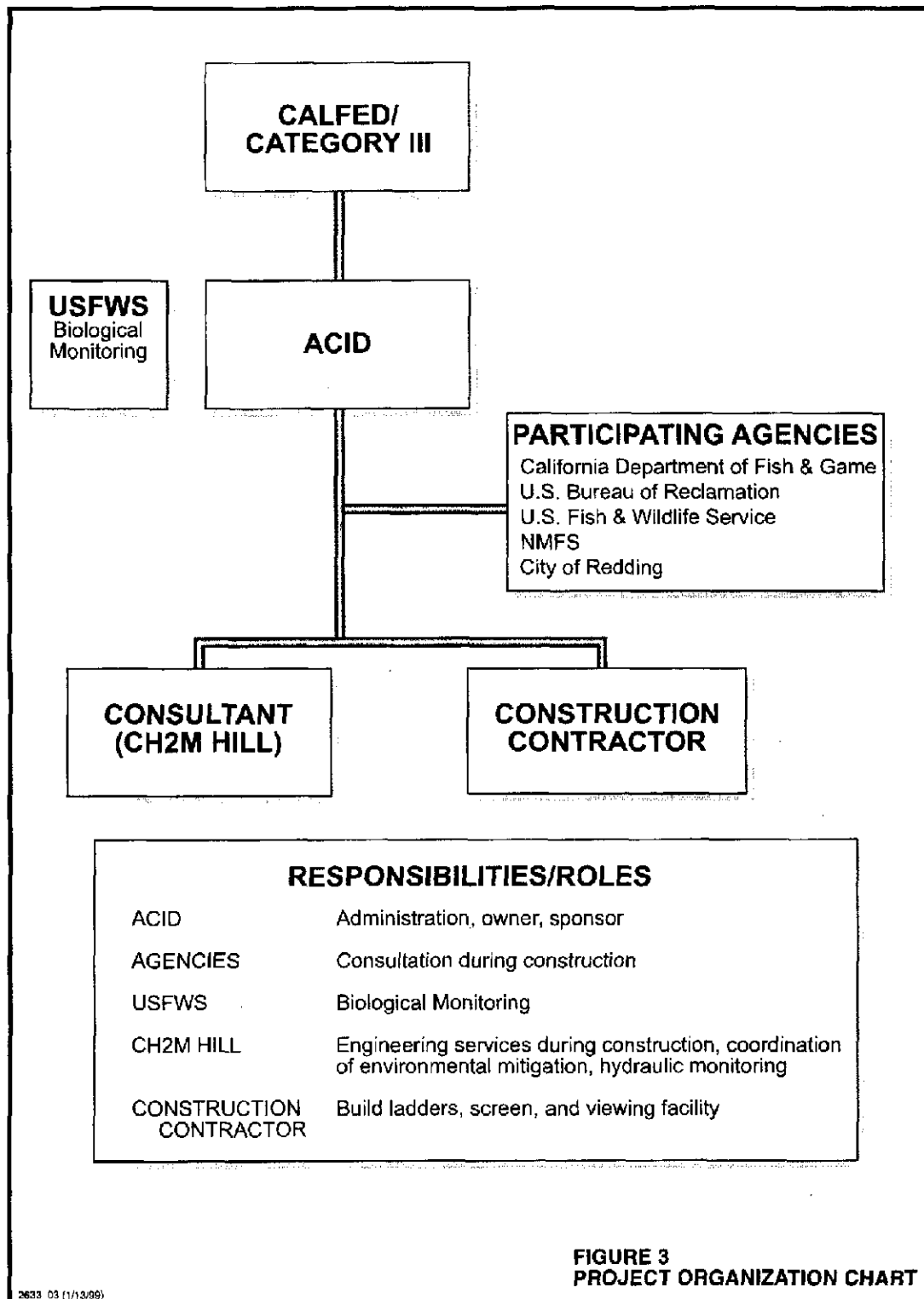
Regarding public outreach, the public has been informed of the project through articles that have appeared in the Valley Post and the Redding Record Searchlight. Additionally, through the public notification and involvement requirements of CEQA and NEPA, the public at large and local citizen groups will have ample opportunity to review and comment on the environmental document, which will describe the project in great detail. A public meeting on the project was held at the Redding Convention Center on October 15, 1998, to receive public comment and elicit concerns about the project that members of the public want to have addressed in the CEQA/NEPA environmental document. Additional public meetings and hearings regarding the project will be held as the CEQA/NEPA process proceeds.

Third-party impacts associated with the project are anticipated to be minimal and will be mitigated in compliance with all applicable regulations and necessary permits. The project will benefit the entire south-central area of Shasta County, as noted above, along with all third parties interested in restoring anadromous fish species in the Sacramento River and Bay-Delta systems. The proposed project directly supports other programs, such as those being implemented under the Central Valley Project Improvement Act (CVPIA) through the Anadromous Fish Restoration Program (AFRP), Section 3406(b)(17), and the California Salmon, Steelhead Trout and Anadromous Fisheries Program Act of 1988.

IX. Applicant's Ability

The project team and participating agencies are shown on Figure 3. ACID staff will manage the project and administer the budget. CH2M HILL will provide construction inspection, engineering services during construction, and hydraulic monitoring services, and will assist ACID in guiding preconstruction activities, environmental impact mitigation, and all other elements of project implementation. ACID and CH2M HILL will coordinate with each of the agencies listed on Figure 3 to ensure compliance with permit conditions. ACID will select a construction contractor by the public competitive bidding process. Biological monitoring will be performed in cooperation with and with participation of the CDFG and USFWS, as described in Section II of this proposal. The funding to cover USFWS biological monitoring for the project may be disbursed directly to USFWS by CALFED or administered through ACID. Environmental impact mitigation and materials testing during construction will be conducted by subcontractors managed by CH2M HILL.

ACID selected CH2M HILL as the principal consultant for the project because of the firm's 51 years of experience in water resources engineering, biological sciences, and environmental planning. Recent projects are fish screen designs for Glenn-Colusa Irrigation District and Reclamation District 108 Sacramento River diversions, Butte Creek Siphon Project design, and environmental documentation and permitting for the above. All of the above projects were undertaken in cooperation with the USFWS, Reclamation, U.S. Army Corps of Engineers, CDFG, DWR, State Reclamation Board, Regional Water Quality Control Board, and NMFS.



Qualifications and experience of the project manager and project engineer are summarized in the following paragraphs. Support staff will be provided through CH2M HILL's Redding office, which has supported Phases I and II of ACID's Fish Passage Improvement Project.

Dee Swearingen, Project Manager

ACID General Manager

Dee Swearingen has managed ACID since 1995 and has more than 28 years of experience in water resources management, water agency administration, and water resources consulting. He has been general manager, secretary, and treasurer for water districts and negotiated water contracts with the DWR and Reclamation. His expertise encompasses district management, budget development, cost analysis, investments, structural design and implementation, water distribution system operation, dam operation and maintenance, liaison, personnel supervision, and public relations. He has been an Association of California Water Agencies board member, Executive Committee member, Vision 2000 Committee member, and California Water Districts Section Vice Chairman and chaired the Northern California Water Association Managers' Committee. Mr. Swearingen has administered and implemented numerous engineering projects for district facilities, including fish screening and passage structures. Mr. Swearingen managed Phases I and II of ACID's Fish Passage Improvement Project.

Ronald Fehringer, P.E./CH2M HILL, Project Engineer

M.S., B.S., Agricultural Engineering; Registered Professional Engineer; California

Ron Fehringer has managed a variety of fisheries restoration design projects, including Phases I and II of ACID's Fish Passage Improvement Project. For the Butte Creek Water Supply and Fish Passage Plan, he characterized water rights associated with Butte Creek and met with water users to assess their existing diversions and future water needs. He developed a conceptual design for alternate water delivery means as part of a comparison of water supply and fish passage alternatives for Reclamation. Mr. Fehringer managed preliminary design, final design, and construction management/inspection for the WCWD's Butte Creek Siphon and Dam Removal project to simultaneously improve fish passage in Butte Creek and the reliability of water deliveries to District customers.

X. Compatibility with Non-Ecosystem Objectives

Although this project has no effect on water quality, water supply reliability, or levee system integrity in the Bay-Delta area, it does affect the water supply reliability for ACID and the City of Redding. The new fish screen will allow ACID to fully utilize its pre-1914 water rights and CVP water without violating NMFS fish screen performance criteria. The existing screen is undersized and experiences intermittent problems relating to inadequate cleaning of the panels, resulting in panel kickouts. These events jeopardize system deliveries.

The poorly screened City of Redding pump at the end of Court Street will be relocated from the river to behind the new screen, resulting in more reliable irrigation of Diestlehorst Pasture without screen performance problems and potential future shutdowns.